

CLAIMS

What is claimed is:

1. A flip chip package, comprising:
 - a substrate having an upper surface and a lower surface, wherein the substrate has a first central area and a first peripheral area encompassing the first central area;
 - a chip having an active surface, wherein the active surface has a second central area and a second peripheral area encompassing the second central area;
 - a plurality of electrically conductive bumps connecting the first peripheral area and the second peripheral area; and
 - a plurality of reinforced bumps interposed between the chip and the substrate, wherein the reinforced bump connects the first central area and the second central area.
2. The flip chip package of claim 1, wherein the first central area is rectangular.
3. The flip chip package of claim 1, wherein the first peripheral area is ring-like.
4. The flip chip package of claim 1, wherein the substrate further comprises a first intermediate area between the first central area and the first peripheral area, and the first intermediate area is ring-like.
5. The flip chip package of claim 1, wherein the electrically conductive bumps comprises an innermost electrically conductive bump close to a center of the first central area and the reinforced bumps comprise an outermost reinforced bump far way from the center of the first central area.
6. The flip chip package of claim 4, wherein the first intermediate area has a width

at least larger than the double of a width of the electrically conductive bump.

7. The flip chip package of claim 5, wherein a distance between the innermost electrically conductive bump and the outermost reinforced bump is at least larger than the double of a width of the reinforced bump.
8. The flip chip package of claim 4, wherein the electrically conductive bump is a sphere and the first intermediate area has a width is at least larger than a diameter of the electrically conductive bump.
9. The flip chip package of claim 5, wherein one of the reinforced bumps is a sphere and a distance between the innermost electrically conductive bump and the outermost reinforced bump is at least larger than the double of a diameter of the reinforced bump.
10. The flip chip package of claim 1, further comprising an underfill disposed between the chip and the substrate and covering the electrically conductive bumps.
11. The flip chip package of claim 1, further comprising an underfill disposed between the chip and the substrate and covering the reinforced bumps.
12. The flip chip package of claim 1, wherein the reinforced bumps comprises metal bumps.
13. The flip chip package of claim 1, wherein one of the reinforced bumps is a thermally conductive bump.
14. The flip chip package of claim 1, further comprising a solder ball formed on the lower surface of the substrate.
15. The flip chip package of claim 4, wherein the electrically conductive bump is a sphere and the first intermediate area has a width is substantially equal to the

double of a diameter of the electrically conductive bump.

16. The flip chip package of claim 5, wherein one of the reinforced bumps is a sphere and a distance between the innermost electrically conductive bump and the outermost reinforced bump is substantially equal to the double of a diameter of the reinforced bump.
17. The flip chip package of claim 1, wherein one of the reinforced bumps is a ring-like bump.
18. The flip chip package of claim 1, wherein the reinforced bumps are made of epoxy.